

## For Voice and Data



The Intersil PRISM® Full Duplex Radio Front End Chip Set is a highly integrated 7 chip solution for RF modems or transceivers employing quadrature modulation and demodulation. Significant

integration of independent transmit and receive functions employ seven ICs. The Receive chain consists of: The HFA3424/21, two high performance, low noise LNA's which cover the 1.7GHz to 2.7GHz range; the HFA3661, a full frequency range combined second LNA/down converter mixer with an LNA bypass mode; the HFA3761, a 10MHz to 400MHz, 82dB IF AGC amplifier with 76dB of dynamic range, integrated with a quadrature demodulator and selectable low pass filters.

The Transmit chain includes: The HFA3763, a 10MHz to 400MHz quadrature modulator integrated with selectable low pass shaping filters and an output stage with a gain control range from 8dB to -35dB; the HFA3663/64 are two IF to RF upconverters integrated with an output RF AGC amplifier with gain control range of 20dB to -10dB; and the HFA3925/26, two monolithic RF power amplifiers. To complete the set, Intersil offers a dual synthesizer for RF and IF local oscillator applications, the HFA3524. Each of these functions may be used individually or in any combination of a variety of RF modem applications.

This chip set is intended to support a variety of full duplex radio applications that employ modulation and demodulation architectures requiring highly linear analog processing schemes. Intersil also offers a complete line of high speed A/D and D/A converters that can interface with this Full Duplex Chip Set.

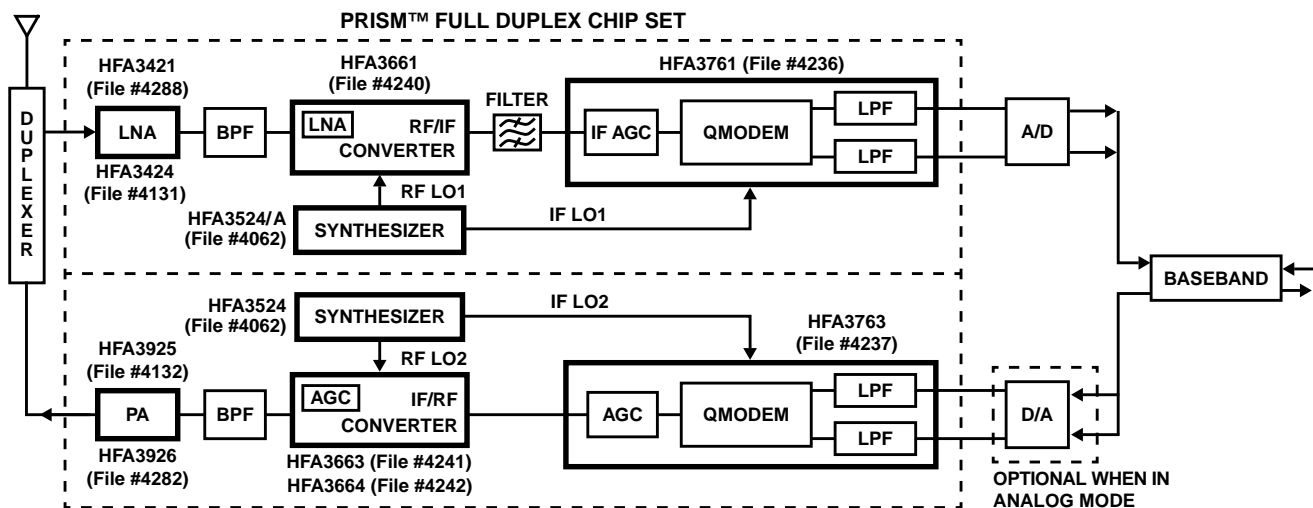
## Features

- Provides Antenna-to-I/Q Baseband Stream
- Low Voltage Operation from 2.7V to 5.5V
- 1.7GHz - 2.7GHz ISM Band Operation
- Single Heterodyne Conversion
- Programmable Antialiasing and Shaping Filters
- 10MHz to 400MHz IF Operation with AGC
- Transmit Variable Gain Range .....60dB
- Receive AGC Range .....76dB
- Chip Rates to 22M Chip/s
- Power Management Control
- Low Profile PCMCIA-Compatible Surface Mount Packaging

## Applications

- Wireless Local Loop Systems
- PCMCIA Wireless Transceivers
- WLAN RF Modems
- TDMA/CDMA Radios
- Part 15 Compliant Radio Links
- Full Duplex Point To Point Transceivers
- PCM Repeater/Transceivers

### Typical Application Diagram

PRISM™ FULL DUPLEX RADIO  
CHIP SET, FILE #4238